

**ICF International**

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**MEMORANDUM**

TO: Karen Jurist, Remedial Project Manager  
 Site Cleanup Section 3, SFD-7-3  
 USEPA Region 9

THROUGH: Joe Eidelberg, Chemist  
 Quality Assurance (QA) Program, MTS-3  
 USEPA Region 9

*Joseph Eidelberg*  
 Digitally Signed

FROM: Kathy O'Brien, Project Manager  
 Environmental Services Assistance Team (ESAT) Region 9  
 ICF International

ESAT Contract No.: EP-W-13-029  
 Technical Direction Form No.: 10106079

DATE: June 9, 2015

SUBJECT: Review of Analytical Data, **Tier 3**

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

Site:	Jervis B. Webb Co.
Site Account No.:	09 WR QB 00
Case No.:	45139
SDG No.:	Y9SN2
Laboratory:	CompuChem (LIBRTY)
Analysis:	Semivolatiles
Samples:	20 Soil Samples
Collection Date:	March 9 and 11, 2015
Reviewer:	Santiago Lee, ESAT

EXES Data Manager has been updated; the dynamic deliverables will be regenerated upon completion of review for the other analyses.

If there are any questions, please contact Joe Eidelberg (QA Program/EPA) at (415) 972-3809.

Attachment

cc: Cynthia Gurley, CLP PO USEPA Region 4  
 Steve Remaley, CLP PO USEPA Region 9  
 Richard Bauer, EPA COR for ESAT Region 9

CLP PO:  FYI     Action  
 SAMPLING ISSUES:  Yes     No



## Data Validation Report - Tier 3

Case No.: 45139  
SDG No.: Y9SN2  
Site: Jervis B. Webb  
Laboratory: CompuChem (LIBRTY)  
Analysis: Semivolatiles  
Reviewer: Santiago Lee, ESAT  
Date: June 9, 2015

### I. SDG SUMMARY

For Sample Information and Laboratory QC, refer to EXES National Functional Guidelines (NFG) Report #06, *Analytical Sample Listing*.

#### Field QC

Field Blanks (FB): Not Collected  
Equipment Blanks (EB): Not Collected  
Background Samples (BG): Not Collected  
Field Duplicates (D1): Y9SN5 and Y9SN6  
Field Duplicates (D2): Y9SP5 and Y9SP6  
Field Duplicates (D3): Y9SP8 and Y9SP9

#### Tables

- 1A: Analytical Results with Qualifications  
1B: Data Qualifier Definitions for Organic Data Review

#### CLP PO Action

None.

#### Sampling Issues

Sample Y9SQ0 is not listed on the chain of custody records (COCs).

#### Additional Comments

The benzo(b)fluoranthene present in sample Y9SN3 was incorrectly reported as nondetected (i.e., a false negative). The laboratory submitted revised data (Form I and quantitation report) and mass spectra upon request, on 06/01/15 (see Table 1A for concentration). The revised result has been entered into the EXES Data Manager.

The extract for sample Y9SN2 was analyzed at a 10-fold dilution due to a hydrocarbon matrix. The quantitation limits for Y9SN2 in Table 1A have been raised to account for the dilution.

In addition to laboratory artifacts (retention times of 16.6, 17.5, and 27.0 minutes), tentatively identified compounds (TICs) are found in field samples Y9SN2 through Y9SN5, Y9SN7, Y9SP0, Y9SP5 through Y9SP9, Y9SQ1, Y9SQ2, and Y9SX0 through Y9SX2 (see attached Form 1Ks).

The laboratory performed manual peak integration on chromatograms for some calibrations and samples. Manual integrations were reviewed and found to be in compliance with CLP Statement of Work (SOW) requirements.

This report was prepared in accordance with the following documents:

- USEPA Contract Laboratory Program Statement of Work for Organics Analysis, Multi-Media, Multi-Concentration, SOM01.1, May 2005;
- Modifications Updating SOM01.1 to SOM01.2, Amended April 11, 2007; and
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008.

For technical definitions, refer to *Exhibit G (Glossary of Terms)*, USEPA Contract Laboratory Program Statement of Work for Organics Analysis, Multi-Media, Multi-Concentration, SOM01.1, May 2005.

## II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	<u>Parameter</u>	<u>Acceptable</u>	<u>Comment</u>
1	Holding Time/Preservation	Yes	
2	GC/MS Tune/GC Performance	Yes	
3	Initial Calibration	No	C
4	Continuing Calibration Verification (CCV)	No	D
5	Laboratory Blanks	Yes	B
6	Field Blanks	N/A	
7	Deuterated Monitoring Compounds (DMCs)	No	E
8	Matrix Spike/Matrix Spike Duplicates (MS/MSDs)	Yes	
9	Internal Standards	Yes	
10	GPC Performance Check	Yes	
11	Compound Identification	Yes	
12	Compound Quantitation	Yes	A
13	System Performance	Yes	
14	Field Duplicate Sample Analysis	No	F

N/A = Not Applicable

## III. VALIDITY AND COMMENTS

- A. Results above the method detection limit (MDL) but below the contract required quantitation limit (CRQL) are estimated and flagged "J" in Table 1A. Results are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in analytical precision near the quantitation limit.
- B. The following result is qualified as nondetected due to method blank contamination and is flagged "U" in Table 1A.
  - Acetophenone in sample Y9SP0.

Acetophenone is present in method blank SBLKSB (see Table 1A for concentration).

C. Results for the following analyte are qualified as estimated due to a large percent relative standard deviation (%RSD) in initial calibration and are flagged "UJ" in Table 1A.

- Pentachlorophenol in samples Y9SN2, Y9SP5, Y9SP6, Y9SQ1, Y9SW9, and Y9SX0.

A %RSD of 35.5% is reported for pentachlorophenol in the 03/19/15 initial calibration, which exceeds the 20.0% validation criterion. In addition, the relative response factor (RRF) for CRQL standard (at 10 µg/L) of 0.053 is below the average RRF of 0.091, indicating low sensitivity at the CRQL.

D. Results for the following analyte are qualified as estimated due to a large percent difference (%D) in associated CCV and are flagged "UJ" in Table 1A.

- Pentachlorophenol in samples Y9SP8, Y9SP9, Y9SQ0, Y9SQ2, Y9SX1, and Y9SX2.

A %D of -30.7% is reported for pentachlorophenol in the 03/17/15 19:22 CCV, which exceeds the  $\pm 25.0\%$  validation criterion for opening CCVs.

E. Nondetected results for the following analytes are qualified as estimated due to low DMC recoveries and are flagged "UJ" in Table 1A.

{4-Methylphenol-d8}

- 2-Methylphenol, 4-methylphenol, and 2,4-dimethylphenol in samples Y9SN7, Y9SP7, Y9SP8, Y9SP9, Y9SQ1, and Y9SX0.

The DMC recoveries outside QC limits are shown below.

Sample	DMC	% Recovery	QC Limit
Y9SN7	4-Methylphenol-d8	5	8-100
Y9SP7	4-Methylphenol-d8	2	8-100
Y9SP8	4-Methylphenol-d8	2	8-100
Y9SP9	4-Methylphenol-d8	7	8-100
Y9SQ1	4-Methylphenol-d8	1	8-100
Y9SX0	4-Methylphenol-d8	4	8-100

Since qualified results are nondetected, false negatives may exist. Samples listed above were not re-extracted.

The reviewer notes that the following DMC recoveries are above the lower acceptance limit but below 10%:

- (1) 4-Methylphenol-d8 in samples Y9SP0 (8%) and Y9SW9 (8%) and
- (2) 4-Chloroaniline-d4 in samples Y9SN3 (7%), Y9SP0 (1%), Y9SP5 (6%), Y9SP6 (4%), Y9SP7 (6%), Y9SW9 (4%), Y9SQ1 (3%), and Y9SX0 (9%).

False negatives may exist for the nondetected results of associated analytes in the samples listed above. Analytes associated with the DMC 4-chloroaniline-d4 are 4-chloroaniline, hexachlorocyclopentadiene, and 3,3'-dichlorobenzidine.

- F. In the analysis of the field duplicate pairs, the following outlier (relative percent difference greater than 25%) is reported.

Analyte	Y9SP5 (D2) Concentration, µg/kg	Y9SP6 (D2) Concentration, µg/kg	RPD
bis(2-Ethylhexyl)phthalate	610	94 J	147

Data users should note that bis(2-ehtylhexyl)phthalate is a common laboratory contaminant. The effect on data usability is not known.

Lab CompuChem (LIBRTY)	SDG Y9SN2	Case 45139	Site Jervis B. Webb	SOW SOM01.2
Sample Location Type Matrix/Level Dilution Factor % Moisture Units	Y9SN2 N/A Field_Sample Soil/Low 10.0 6.02 ug/kg	Y9SN3 N/A Field_Sample Soil/Low 1.0 6.55 ug/kg	Y9SN4 N/A Field_Sample Soil/Low 1.0 13.49 ug/kg	Y9SN5 (D1) N/A Field_Sample Soil/Low 1.0 9.81 ug/kg
Compound	Result Flag Com	Result Flag Com	Result Flag Com	Result Flag Com
Benzaldehyde	1800 U	180 U	200 U	190 U
Phenol	1800 U	180 U	200 U	190 U
Bis (2-Chloroethyl) ether	1800 U	180 U	200 U	190 U
2-Chlorophenol	1800 U	180 U	200 U	190 U
2-Methylphenol	1800 U	180 U	200 U	190 U
2,2-Oxybis (1-Chloropropane)	1800 U	180 U	200 U	190 U
Acetophenone	1800 U	180 U	200 U	190 U
4-Methylphenol	1800 U	180 U	200 U	190 U
N-Nitroso-di-n-propylamine	1800 U	180 U	200 U	190 U
Hexachloroethane	1800 U	180 U	200 U	190 U
Nitrobenzene	1800 U	180 U	200 U	190 U
Isophorone	1800 U	180 U	200 U	190 U
2-Nitrophenol	1800 U	180 U	200 U	190 U
2,4-Dimethylphenol	1800 U	180 U	200 U	190 U
Bis (2-Chloroethoxy) methane	1800 U	180 U	200 U	190 U
2,4-Dichlorophenol	1800 U	180 U	200 U	190 U
Naphthalene	1800 U	180 U	200 U	190 U
4-Chloroaniline	1800 U	180 U	200 U	190 U
Hexachlorobutadiene	1800 U	180 U	200 U	190 U
Caprolactam	1800 U	180 U	200 U	190 U
4-Chloro-3-methylphenol	1800 U	180 U	200 U	190 U
2-Methylnaphthalene	1800 U	180 U	200 U	190 U
Hexachlorocyclopentadiene	1800 U	180 U	200 U	190 U
2,4,6-Trichlorophenol	1800 U	180 U	200 U	190 U
2,4,5-Trichlorophenol	1800 U	180 U	200 U	190 U
1,1'-Biphenyl	1800 U	180 U	200 U	190 U
2-Chloronaphthalene	1800 U	180 U	200 U	190 U
2-Nitroaniline	3500 U	350 U	380 U	360 U
Dimethylphthalate	1800 U	180 U	200 U	190 U
2,6-Dinitrotoluene	1800 U	180 U	200 U	190 U
Acenaphthylene	1800 U	180 U	200 U	190 U
3-Nitroaniline	3500 U	350 U	380 U	360 U
Acenaphthene	1800 U	180 U	200 U	190 U

Lab CompuChem (LIBRTY)

SDG Y9SN2

Case 45139

Site Jervis B. Webb

SOW SOM01.2

Sample Location Type Matrix/Level	Y9SN2 N/A Field_Sample Soil/Low			Y9SN3 N/A Field_Sample Soil/Low			Y9SN4 N/A Field_Sample Soil/Low			Y9SN5 (D1) N/A Field_Sample Soil/Low		
Dilution Factor % Moisture Units	10.0 6.02 ug/kg	1.0 6.55 ug/kg	1.0 13.49 ug/kg									
Compound	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com
2,4-Dinitrophenol	3500	U		350	U		380	U		360	U	
4-Nitrophenol	3500	U		350	U		380	U		360	U	
Dibenzofuran	1800	U		180	U		200	U		190	U	
2,4-Dinitrotoluene	1800	U		180	U		200	U		190	U	
Diethylphthalate	1800	U		180	U		200	U		190	U	
Fluorene	1800	U		180	U		200	U		190	U	
4-Chlorophenyl-phenylether	1800	U		180	U		200	U		190	U	
4-Nitroaniline	3500	U		350	U		380	U		360	U	
4,6-Dinitro-2-methylphenol	3500	U		350	U		380	U		360	U	
N-Nitrosodiphenylamine	1800	U		180	U		200	U		190	U	
1,2,4,5-Tetrachlorobenzene	1800	U		180	U		200	U		190	U	
4-Bromophenyl-phenylether	1800	U		180	U		200	U		190	U	
Hexachlorobenzene	1800	U		180	U		200	U		190	U	
Atrazine	1800	U		180	U		200	U		190	U	
Pentachlorophenol	3500	UJ C		350	U		380	U		360	U	
Phenanthrene	1800	U		180	U		200	U		190	U	
Anthracene	1800	U		180	U		200	U		190	U	
Carbazole	1800	U		180	U		200	U		190	U	
Di-n-butylphthalate	1800	U		180	U		200	U		190	U	
Fluoranthene	1800	U		180	U		200	U		190	U	
Pyrene	1800	U		180	U		200	U		190	U	
Butylbenzylphthalate	1800	U		180	U		200	U		190	U	
3,3-Dichlorobenzidine	1800	U		180	U		200	U		190	U	
Benzo (a) anthracene	1800	U		180	U		200	U		190	U	
Chrysene	1800	U		180	U		200	U		190	U	
Bis (2-Ethylhexyl) phthalate	1800	U		180	U		200	U		190	U	
Di-n-octylphthalate	1800	U		180	U		200	U		190	U	
Benzo (b) fluoranthene	1800	U		19	J A		200	U		190	U	
Benzo (k) fluoranthene	1800	U		180	U		200	U		190	U	
Benzo (a) pyrene	1800	U		180	U		200	U		190	U	
Indeno (1,2,3-cd) pyrene	1800	U		180	U		200	U		190	U	
Dibenzo (a,h) anthracene	1800	U		180	U		200	U		190	U	
Benzo (g,h,i) perylene	1800	U		180	U		200	U		190	U	
2,3,4,6-Tetrachlorophenol	1800	U		180	U		200	U		190	U	

Com - Comments. Refer to the corresponding section in the Narrative for each letter.

D1, D2, etc. - Field Duplicate Pairs; FB - Field Blank, EB - Equipment Blank; BG - Background Sample.

Lab CompuChem (LIBRTY)	SDG Y9SN2	Case 45139	Site Jervis B. Webb	SOW SOM01.2					
Sample Location	Y9SN6 (D1) N/A Field_Sample Soil/Low		Y9SN7 N/A Field_Sample Soil/Low		Y9SN8 N/A Field_Sample Soil/Low		Y9SP0 JW-SB10-2 Field_Sample Soil/Low 1.0 ug/kg		
Type Matrix/Level Dilution Factor % Moisture Units	1.0	20.88 ug/kg	1.0	19.93 ug/kg	1.0	7.47 ug/kg	1.0	5.74 ug/kg	
Compound	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com
Benzaldehyde	210	U		210	U		180	U	
Phenol	210	U		210	U		180	U	
Bis (2-Chloroethyl) ether	210	U		210	U		180	U	
2-Chlorophenol	210	U		210	U		180	U	
2-Methylphenol	210	U		210	UJ	E	180	U	
2,2-Oxybis (1-Chloropropane)	210	U		210	U		180	U	
Acetophenone	210	U		210	U		180	U	
4-Methylphenol	210	U		210	UJ	E	180	U	
N-Nitroso-di-n-propylamine	210	U		210	U		180	U	
Hexachloroethane	210	U		210	U		180	U	
Nitrobenzene	210	U		210	U		180	U	
Isophorone	210	U		210	U		180	U	
2-Nitrophenol	210	U		210	U		180	U	
2,4-Dimethylphenol	210	U		210	UJ	E	180	U	
Bis (2-Chloroethoxy) methane	210	U		210	U		180	U	
2,4-Dichlorophenol	210	U		210	U		180	U	
Naphthalene	210	U		210	U		180	U	
4-Chloroaniline	210	U		210	U		180	U	
Hexachlorobutadiene	210	U		210	U		180	U	
Caprolactam	210	U		210	U		180	U	
4-Chloro-3-methylphenol	210	U		210	U		180	U	
2-Methylnaphthalene	210	U		210	U		180	U	
Hexachlorocyclopentadiene	210	U		210	U		180	U	
2,4,6-Trichlorophenol	210	U		210	U		180	U	
2,4,5-Trichlorophenol	210	U		210	U		180	U	
1,1'-Biphenyl	210	U		210	U		180	U	
2-Chloronaphthalene	210	U		210	U		180	U	
2-Nitroaniline	420	U		410	U		360	U	
Dimethylphthalate	210	U		210	U		180	U	
2,6-Dinitrotoluene	210	U		210	U		180	U	
Acenaphthylene	210	U		210	U		180	U	
3-Nitroaniline	420	U		410	U		360	U	
Acenaphthene	210	U		210	U		180	U	

## Table 1A: Analytical Results with Qualifications

June 9, 2015

Lab CompuChem (LIBRTY)	SDG Y9SN2	Case 45139	Site Jervis B. Webb	SOW SOM01.2								
Sample Location Type Matrix/Level Dilution Factor % Moisture Units	Y9SN6 (D1) N/A Field_Sample Soil/Low 1.0 20.88 ug/kg	Y9SN7 N/A Field_Sample Soil/Low 1.0 19.93 ug/kg	Y9SN8 N/A Field_Sample Soil/Low 1.0 7.47 ug/kg	Y9SP0 JW-SB10-2 Field_Sample Soil/Low 1.0 5.74 ug/kg								
Compound	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com
2,4-Dinitrophenol	420	U		410	U		360	U		350	U	
4-Nitrophenol	420	U		410	U		360	U		350	U	
Dibenzofuran	210	U		210	U		180	U		180	U	
2,4-Dinitrotoluene	210	U		210	U		180	U		180	U	
Diethylphthalate	210	U		210	U		180	U		180	U	
Fluorene	210	U		210	U		180	U		180	U	
4-Chlorophenyl-phenylether	210	U		210	U		180	U		180	U	
4-Nitroaniline	420	U		410	U		360	U		350	U	
4,6-Dinitro-2-methylphenol	420	U		410	U		360	U		350	U	
N-Nitrosodiphenylamine	210	U		210	U		180	U		180	U	
1,2,4,5-Tetrachlorobenzene	210	U		210	U		180	U		180	U	
4-Bromophenyl-phenylether	210	U		210	U		180	U		180	U	
Hexachlorobenzene	210	U		210	U		180	U		180	U	
Atrazine	210	U		210	U		180	U		180	U	
Pentachlorophenol	420	U		410	U		360	U		350	U	
Phenanthere	210	U		210	U		180	U		180	U	
Anthracene	210	U		210	U		180	U		180	U	
Carbazole	210	U		210	U		180	U		180	U	
Di-n-butylphthalate	210	U		210	U		180	U		180	U	
Fluoranthene	210	U		210	U		180	U		35	J	A
Pyrene	210	U		210	U		180	U		180	U	
Butylbenzylphthalate	210	U		210	U		180	U		180	U	
3,3-Dichlorobenzidine	210	U		210	U		180	U		180	U	
Benzo (a) anthracene	210	U		210	U		180	U		180	U	
Chrysene	210	U		210	U		180	U		180	U	
Bis (2-Ethylhexyl) phthalate	210	U		210	U		180	U		360		
Di-n-octylphthalate	210	U		210	U		180	U		180	U	
Benzo (b) fluoranthene	210	U		210	U		180	U		180	U	
Benzo (k) fluoranthene	210	U		210	U		180	U		180	U	
Benzo (a) pyrene	210	U		210	U		180	U		180	U	
Indeno (1,2,3-cd) pyrene	210	U		210	U		180	U		180	U	
Dibenzo (a,h) anthracene	210	U		210	U		180	U		180	U	
Benzo (g,h,i) perylene	210	U		210	U		180	U		180	U	
2,3,4,6-Tetrachlorophenol	210	U		210	U		180	U		180	U	

Com - Comments. Refer to the corresponding section in the Narrative for each letter.

D1, D2, etc. - Field Duplicate Pairs; FB - Field Blank, EB - Equipment Blank; BG - Background Sample.

Lab CompuChem (LIBRTY)

SDG Y9SN2

Case 45139

Site Jervis B. Webb

SOW SOM01.2

Sample Location Type Matrix/Level Dilution Factor % Moisture Units	Y9SP5 (D2) N/A Field_Sample Soil/Low			Y9SP6 (D2) N/A Field_Sample Soil/Low			Y9SP7 N/A Field_Sample Soil/Low			Y9SP8 (D3) N/A Field_Sample Soil/Low		
Compound	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com
Benzaldehyde	180	U		180	U		180	U		200	U	
Phenol	180	U		180	U		180	U		200	U	
Bis (2-Chloroethyl) ether	180	U		180	U		180	U		200	U	
2-Chlorophenol	180	U		180	U		180	U		200	U	
2-Methylphenol	180	U		180	U		180	UJ	E	200	UJ	E
2,2-Oxybis (1-Chloropropane)	180	U		180	U		180	U		200	U	
Acetophenone	180	U		180	U		180	U		200	U	
4-Methylphenol	180	U		180	U		180	UJ	E	200	UJ	E
N-Nitroso-di-n-propylamine	180	U		180	U		180	U		200	U	
Hexachloroethane	180	U		180	U		180	U		200	U	
Nitrobenzene	180	U		180	U		180	U		200	U	
Isophorone	180	U		180	U		180	U		200	U	
2-Nitrophenol	180	U		180	U		180	U		200	U	
2,4-Dimethylphenol	180	U		180	U		180	UJ	E	200	UJ	E
Bis (2-Chloroethoxy) methane	180	U		180	U		180	U		200	U	
2,4-Dichlorophenol	180	U		180	U		180	U		200	U	
Naphthalene	180	U		180	U		180	U		200	U	
4-Chloroaniline	180	U		180	U		180	U		200	U	
Hexachlorobutadiene	180	U		180	U		180	U		200	U	
Caprolactam	180	U		180	U		180	U		200	U	
4-Chloro-3-methylphenol	180	U		180	U		180	U		200	U	
2-Methylnaphthalene	180	U		180	U		180	U		200	U	
Hexachlorocyclopentadiene	180	U		180	U		180	U		200	U	
2,4,6-Trichlorophenol	180	U		180	U		180	U		200	U	
2,4,5-Trichlorophenol	180	U		180	U		180	U		200	U	
1,1'-Biphenyl	180	U		180	U		180	U		200	U	
2-Chloronaphthalene	180	U		180	U		180	U		200	U	
2-Nitroaniline	360	U		360	U		350	U		380	U	
Dimethylphthalate	180	U		180	U		180	U		200	U	
2,6-Dinitrotoluene	180	U		180	U		180	U		200	U	
Acenaphthylene	180	U		180	U		180	U		200	U	
3-Nitroaniline	360	U		360	U		350	U		380	U	
Acenaphthene	180	U		180	U		180	U		200	U	

Lab	CompuChem (LIBRTY)	SDG	Y9SN2	Case	45139	Site	Jervis B. Webb	SOW	SOM01.2		
<b>Sample</b>		<b>Y9SP5 (D2)</b>			<b>Y9SP6 (D2)</b>			<b>Y9SP7</b>			
<b>Location</b>		<b>N/A</b>			<b>N/A</b>			<b>N/A</b>			
<b>Type</b>		<b>Field_Sample</b>			<b>Field_Sample</b>			<b>Field_Sample</b>			
<b>Matrix/Level</b>		<b>Soil/Low</b>			<b>Soil/Low</b>			<b>Soil/Low</b>			
<b>Dilution Factor</b>		<b>1.0</b>			<b>1.0</b>			<b>1.0</b>			
<b>% Moisture</b>		<b>7.91</b>			<b>7.71</b>			<b>6.84</b>			
<b>Units</b>		<b>ug/kg</b>			<b>ug/kg</b>			<b>ug/kg</b>			
<b>Compound</b>		<b>Result</b>	<b>Flag</b>	<b>Com</b>	<b>Result</b>	<b>Flag</b>	<b>Com</b>	<b>Result</b>	<b>Flag</b>	<b>Com</b>	
2,4-Dinitrophenol	360	U			360	U		350	U		
4-Nitrophenol	360	U			360	U		350	U		
Dibenzofuran	180	U			180	U		180	U		
2,4-Dinitrotoluene	180	U			180	U		180	U		
Diethylphthalate	180	U			180	U		180	U		
Fluorene	180	U			180	U		180	U		
4-Chlorophenyl-phenylether	180	U			180	U		180	U		
4-Nitroaniline	360	U			360	U		350	U		
4,6-Dinitro-2-methylphenol	360	U			360	U		350	U		
N-Nitrosodiphenylamine	180	U			180	U		180	U		
1,2,4,5-Tetrachlorobenzene	180	U			180	U		180	U		
4-Bromophenyl-phenylether	180	U			180	U		180	U		
Hexachlorobenzene	180	U			180	U		180	U		
Atrazine	180	U			180	U		180	U		
Pentachlorophenol	360	UJ	C		360	UJ	C	350	U		
Phenanthere	180	U			180	U		180	U		
Anthracene	180	U			180	U		180	U		
Carbazole	180	U			180	U		180	U		
Di-n-butylphthalate	180	U			180	U		180	U		
Fluoranthene	180	U			180	U		180	U		
Pyrene	180	U			180	U		180	U		
Butylbenzylphthalate	180	U			180	U		180	U		
3,3-Dichlorobenzidine	180	U			180	U		180	U		
Benzo (a) anthracene	180	U			180	U		180	U		
Chrysene	180	U			180	U		180	U		
Bis (2-Ethylhexyl) phthalate	610		F	94	J	A,F	180	U		200	U
Di-n-octylphthalate	180	U			180	U		180	U		
Benzo (b) fluoranthene	180	U			180	U		180	U		
Benzo (k) fluoranthene	180	U			180	U		180	U		
Benzo (a) pyrene	180	U			180	U		180	U		
Indeno (1,2,3-cd) pyrene	180	U			180	U		180	U		
Dibenzo (a,h) anthracene	180	U			180	U		180	U		
Benzo (g,h,i) perylene	180	U			180	U		180	U		
2,3,4,6-Tetrachlorophenol	180	U			180	U		180	U		

Com - Comments. Refer to the corresponding section in the Narrative for each letter.

D1, D2, etc. - Field Duplicate Pairs; FB - Field Blank, EB - Equipment Blank; BG - Background Sample.

## Table 1A: Analytical Results with Qualifications

June 9, 2015

Lab	CompuChem (LIBRTY)	SDG	Y9SN2	Case	45139	Site	Jervis B. Webb	SOW	SOM01.2
Sample Location Type Matrix/Level Dilution Factor % Moisture Units	Y9SP9 (D3) N/A Field_Sample Soil/Low 1.0 13.88 ug/kg			Y9SQ0 N/A Field_Sample Soil/Low 1.0 19.57 ug/kg			Y9SQ1 N/A Field_Sample Soil/Low 1.0 15.44 ug/kg		
Compound	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com
Benzaldehyde	190	U		210	U		200	U	
Phenol	190	U		210	U		200	U	
Bis (2-Chloroethyl) ether	190	U		210	U		200	U	
2-Chlorophenol	190	U		210	U		200	U	
2-Methylphenol	190	UJ	E	210	U		200	UJ	E
2,2-Oxybis (1-Chloropropane)	190	U		210	U		200	U	
Acetophenone	190	U		210	U		200	U	
4-Methylphenol	190	UJ	E	210	U		200	UJ	E
N-Nitroso-di-n-propylamine	190	U		210	U		200	U	
Hexachloroethane	190	U		210	U		200	U	
Nitrobenzene	190	U		210	U		200	U	
Isophorone	190	U		210	U		200	U	
2-Nitrophenol	190	U		210	U		200	U	
2,4-Dimethylphenol	190	UJ	E	210	U		200	UJ	E
Bis (2-Chloroethoxy) methane	190	U		210	U		200	U	
2,4-Dichlorophenol	190	U		210	U		200	U	
Naphthalene	190	U		210	U		200	U	
4-Chloroaniline	190	U		210	U		200	U	
Hexachlorobutadiene	190	U		210	U		200	U	
Caprolactam	190	U		210	U		200	U	
4-Chloro-3-methylphenol	190	U		210	U		200	U	
2-Methylnaphthalene	190	U		210	U		200	U	
Hexachlorocyclopentadiene	190	U		210	U		200	U	
2,4,6-Trichlorophenol	190	U		210	U		200	U	
2,4,5-Trichlorophenol	190	U		210	U		200	U	
1,1'-Biphenyl	190	U		210	U		200	U	
2-Chloronaphthalene	190	U		210	U		200	U	
2-Nitroaniline	380	U		400	U		390	U	
Dimethylphthalate	190	U		210	U		200	U	
2,6-Dinitrotoluene	190	U		210	U		200	U	
Acenaphthylene	190	U		210	U		200	U	
3-Nitroaniline	380	U		400	U		390	U	
Acenaphthene	190	U		210	U		200	U	

Lab	CompuChem (LIBRTY)	SDG	Y9SN2	Case	45139	Site	Jervis B. Webb	SOW	SOM01.2
Sample Location		Y9SP9 (D3)		Y9SQ0		Y9SQ1		Y9SQ2	
Type	N/A	Field_Sample	N/A	Field_Sample	N/A	Field_Sample	N/A	Field_Sample	N/A
Matrix/Level	Soil/Low	Soil/Low	Soil/Low	Soil/Low	Soil/Low	Soil/Low	Soil/Low	Soil/Low	Soil/Low
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
% Moisture Units	13.88 ug/kg	19.57 ug/kg	15.44 ug/kg	6.19 ug/kg					
Compound	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com
2,4-Dinitrophenol	380	U		400	U		390	U	
4-Nitrophenol	380	U		400	U		390	U	
Dibenzofuran	190	U		210	U		200	U	
2,4-Dinitrotoluene	190	U		210	U		200	U	
Diethylphthalate	190	U		210	U		200	U	
Fluorene	190	U		210	U		200	U	
4-Chlorophenyl-phenylether	190	U		210	U		200	U	
4-Nitroaniline	380	U		400	U		390	U	
4,6-Dinitro-2-methylphenol	380	U		400	U		390	U	
N-Nitrosodiphenylamine	190	U		210	U		200	U	
1,2,4,5-Tetrachlorobenzene	190	U		210	U		200	U	
4-Bromophenyl-phenylether	190	U		210	U		200	U	
Hexachlorobenzene	190	U		210	U		200	U	
Atrazine	190	U		210	U		200	U	
Pentachlorophenol	380	UJ	D	400	UJ	D	390	UJ	C
Phenanthrene	190	U		210	U		200	U	
Anthracene	190	U		210	U		200	U	
Carbazole	190	U		210	U		200	U	
Di-n-butylphthalate	190	U		210	U		200	U	
Fluoranthene	190	U		210	U		200	U	
Pyrene	190	U		210	U		200	U	
Butylbenzylphthalate	190	U		210	U		200	U	
3,3-Dichlorobenzidine	190	U		210	U		200	U	
Benzo (a) anthracene	190	U		210	U		200	U	
Chrysene	190	U		210	U		200	U	
Bis (2-Ethylhexyl) phthalate	190	U		210	U		200	U	
Di-n-octylphthalate	190	U		210	U		200	U	
Benzo (b) fluoranthene	190	U		210	U		200	U	
Benzo (k) fluoranthene	190	U		210	U		200	U	
Benzo (a) pyrene	190	U		210	U		200	U	
Indeno (1,2,3-cd) pyrene	190	U		210	U		200	U	
Dibenzo (a,h) anthracene	190	U		210	U		200	U	
Benzo (g,h,i) perylene	190	U		210	U		200	U	
2,3,4,6-Tetrachlorophenol	190	U		210	U		200	U	

Com - Comments. Refer to the corresponding section in the Narrative for each letter.

D1, D2, etc. - Field Duplicate Pairs; FB - Field Blank, EB - Equipment Blank; BG - Background Sample.

Lab CompuChem (LIBRTY)	SDG Y9SN2	Case 45139	Site Jervis B. Webb	SOW SOM01.2								
Sample Location Type Matrix/Level Dilution Factor % Moisture Units	Y9SW9 N/A Field_Sample Soil/Low 1.0 11.48 ug/kg	Y9SX0 N/A Field_Sample Soil/Low 1.0 7.06 ug/kg	Y9SX1 N/A Field_Sample Soil/Low 1.0 11.18 ug/kg	Y9SX2 N/A Field_Sample Soil/Low 1.0 22.42 ug/kg								
Compound	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com
Benzaldehyde	190	U		180	U		190	U		220	U	
Phenol	190	U		180	U		190	U		220	U	
Bis (2-Chloroethyl) ether	190	U		180	U		190	U		220	U	
2-Chlorophenol	190	U		180	U		190	U		220	U	
2-Methylphenol	190	U		180	UJ	E	190	U		220	U	
2,2-Oxybis (1-Chloropropane)	190	U		180	U		190	U		220	U	
Acetophenone	190	U		180	U		190	U		220	U	
4-Methylphenol	190	U		180	UJ	E	190	U		220	U	
N-Nitroso-di-n-propylamine	190	U		180	U		190	U		220	U	
Hexachloroethane	190	U		180	U		190	U		220	U	
Nitrobenzene	190	U		180	U		190	U		220	U	
Isophorone	190	U		180	U		190	U		220	U	
2-Nitrophenol	190	U		180	U		190	U		220	U	
2,4-Dimethylphenol	190	U		180	UJ	E	190	U		220	U	
Bis (2-Chloroethoxy) methane	190	U		180	U		190	U		220	U	
2,4-Dichlorophenol	190	U		180	U		190	U		220	U	
Naphthalene	190	U		180	U		190	U		220	U	
4-Chloroaniline	190	U		180	U		190	U		220	U	
Hexachlorobutadiene	190	U		180	U		190	U		220	U	
Caprolactam	190	U		180	U		190	U		220	U	
4-Chloro-3-methylphenol	190	U		180	U		190	U		220	U	
2-Methylnaphthalene	190	U		180	U		190	U		220	U	
Hexachlorocyclopentadiene	190	U		180	U		190	U		220	U	
2,4,6-Trichlorophenol	190	U		180	U		190	U		220	U	
2,4,5-Trichlorophenol	190	U		180	U		190	U		220	U	
1,1'-Biphenyl	190	U		180	U		190	U		220	U	
2-Chloronaphthalene	190	U		180	U		190	U		220	U	
2-Nitroaniline	370	U		350	U		370	U		420	U	
Dimethylphthalate	190	U		180	U		190	U		220	U	
2,6-Dinitrotoluene	190	U		180	U		190	U		220	U	
Acenaphthylene	190	U		180	U		190	U		220	U	
3-Nitroaniline	370	U		350	U		370	U		420	U	
Acenaphthene	190	U		180	U		190	U		220	U	

Lab CompuChem (LIBRTY)	SDG Y9SN2	Case 45139	Site Jervis B. Webb	SOW SOM01.2								
Sample Location Type Matrix/Level Dilution Factor % Moisture Units	Y9SW9 N/A Field_Sample Soil/Low		Y9SX0 N/A Field_Sample Soil/Low		Y9SX1 N/A Field_Sample Soil/Low		Y9SX2 N/A Field_Sample Soil/Low					
Compound	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com
2,4-Dinitrophenol	370	U		350	U		370	U		420	U	
4-Nitrophenol	370	U		350	U		370	U		420	U	
Dibenzofuran	190	U		180	U		190	U		220	U	
2,4-Dinitrotoluene	190	U		180	U		190	U		220	U	
Diethylphthalate	190	U		180	U		190	U		220	U	
Fluorene	190	U		180	U		190	U		220	U	
4-Chlorophenyl-phenylether	190	U		180	U		190	U		220	U	
4-Nitroaniline	370	U		350	U		370	U		420	U	
4,6-Dinitro-2-methylphenol	370	U		350	U		370	U		420	U	
N-Nitrosodiphenylamine	190	U		180	U		190	U		220	U	
1,2,4,5-Tetrachlorobenzene	190	U		180	U		190	U		220	U	
4-Bromophenyl-phenylether	190	U		180	U		190	U		220	U	
Hexachlorobenzene	190	U		180	U		190	U		220	U	
Atrazine	190	U		180	U		190	U		220	U	
Pentachlorophenol	370	UJ	C	350	UJ	C	370	UJ	D	420	UJ	D
Phenanthrene	190	U		180	U		190	U		220	U	
Anthracene	190	U		180	U		190	U		220	U	
Carbazole	190	U		180	U		190	U		220	U	
Di-n-butylphthalate	190	U		180	U		190	U		220	U	
Fluoranthene	190	U		180	U		190	U		220	U	
Pyrene	190	U		180	U		190	U		220	U	
Butylbenzylphthalate	190	U		180	U		190	U		220	U	
3,3-Dichlorobenzidine	190	U		180	U		190	U		220	U	
Benzo (a) anthracene	190	U		180	U		190	U		220	U	
Chrysene	190	U		180	U		190	U		220	U	
Bis (2-Ethylhexyl) phthalate	190	U		180	U		190	U		220	U	
Di-n-octylphthalate	190	U		180	U		190	U		220	U	
Benzo (b) fluoranthene	190	U		180	U		190	U		220	U	
Benzo (k) fluoranthene	190	U		180	U		190	U		220	U	
Benzo (a) pyrene	190	U		180	U		190	U		220	U	
Indeno (1,2,3-cd) pyrene	190	U		180	U		190	U		220	U	
Dibenzo (a,h) anthracene	190	U		180	U		190	U		220	U	
Benzo (g,h,i) perylene	190	U		180	U		190	U		220	U	
2,3,4,6-Tetrachlorophenol	190	U		180	U		190	U		220	U	

Com - Comments. Refer to the corresponding section in the Narrative for each letter.

D1, D2, etc. - Field Duplicate Pairs; FB - Field Blank, EB - Equipment Blank; BG - Background Sample.

Lab CompuChem (LIBRTY)

SDG Y9SN2

Case 45139

Site Jervis B. Webb

SOW SOM01.2

Sample Location Type Matrix/Level Dilution Factor % Moisture Units	SBLKSB																				
	Method_Blank Soil/Low																				
	1.0	0	ug/kg																		
Compound	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com									
Benzaldehyde	170	U																			
Phenol	170	U																			
Bis (2-Chloroethyl) ether	170	U																			
2-Chlorophenol	170	U																			
2-Methylphenol	170	U																			
2,2-Oxybis (1-Chloropropane)	170	U																			
Acetophenone	85	J	A																		
4-Methylphenol	170	U																			
N-Nitroso-di-n-propylamine	170	U																			
Hexachloroethane	170	U																			
Nitrobenzene	170	U																			
Isophorone	170	U																			
2-Nitrophenol	170	U																			
2,4-Dimethylphenol	170	U																			
Bis (2-Chloroethoxy) methane	170	U																			
2,4-Dichlorophenol	170	U																			
Naphthalene	170	U																			
4-Chloroaniline	170	U																			
Hexachlorobutadiene	170	U																			
Caprolactam	170	U																			
4-Chloro-3-methylphenol	170	U																			
2-Methylnaphthalene	170	U																			
Hexachlorocyclopentadiene	170	U																			
2,4,6-Trichlorophenol	170	U																			
2,4,5-Trichlorophenol	170	U																			
1,1'-Biphenyl	170	U																			
2-Chloronaphthalene	170	U																			
2-Nitroaniline	330	U																			
Dimethylphthalate	170	U																			
2,6-Dinitrotoluene	170	U																			
Acenaphthylene	170	U																			
3-Nitroaniline	330	U																			
Acenaphthene	170	U																			

Lab CompuChem (LIBRTY)	SDG Y9SN2	Case 45139	Site Jervis B. Webb	SOW SOM01.2								
Sample Location Type Matrix/Level Dilution Factor % Moisture Units	SBLKSB Method_Blank Soil/Low 1.0 0 ug/kg											
Compound	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com	Result	Flag	Com
2,4-Dinitrophenol	330	U										
4-Nitrophenol	330	U										
Dibenzofuran	170	U										
2,4-Dinitrotoluene	170	U										
Diethylphthalate	170	U										
Fluorene	170	U										
4-Chlorophenyl-phenylether	170	U										
4-Nitroaniline	330	U										
4,6-Dinitro-2-methylphenol	330	U										
N-Nitrosodiphenylamine	170	U										
1,2,4,5-Tetrachlorobenzene	170	U										
4-Bromophenyl-phenylether	170	U										
Hexachlorobenzene	170	U										
Atrazine	170	U										
Pentachlorophenol	330	U										
Phenanthrene	170	U										
Anthracene	170	U										
Carbazole	170	U										
Di-n-butylphthalate	170	U										
Fluoranthene	170	U										
Pyrene	170	U										
Butylbenzylphthalate	170	U										
3,3-Dichlorobenzidine	170	U										
Benzo (a) anthracene	170	U										
Chrysene	170	U										
Bis (2-Ethylhexyl) phthalate	170	U										
Di-n-octylphthalate	170	U										
Benzo (b) fluoranthene	170	U										
Benzo (k) fluoranthene	170	U										
Benzo (a) pyrene	170	U										
Indeno (1,2,3-cd) pyrene	170	U										
Dibenzo (a,h) anthracene	170	U										
Benzo (g,h,i) perylene	170	U										
2,3,4,6-Tetrachlorophenol	170	U										

Com - Comments. Refer to the corresponding section in the Narrative for each letter.

D1, D2, etc. - Field Duplicate Pairs; FB - Field Blank, EB - Equipment Blank; BG - Background Sample.

**TABLE 1B**  
**DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW**

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review," June 2008.

- U     The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method.
- J     The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL).
- NJ    The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ    The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
- R     The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.

IR - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Y9SN2

Lab Name:	COMPUCHEM	Contract#:	SPN11032
Lab Code#:	LIBRTY Case No.: 45139	Mod. Ref No.:	SDG No.: Y9SN2
Matrix:	(SOIL/SEW/wATER) SOIL	Lab Sample ID#:	1503023-01
Sample wt/vol:	30.2 (g/mL)	Lab File ID#:	1503023-01D70.3
Level:	(LOW/MED) LOW	Extraction: (Type):	SOMC
% Moisture:	6	Decanted: (Y/N):	N
Concentrated Extract Volume:	500 mL	Date Received:	03/10/2015
Injection Volume:	2.0 (uL)	Date Extracted:	03/12/2015
HPLC Cleanup: (Y/N):	Y	pH:	7.9
CONCENTRATION UNITS: (ug/L or ug/kg)		Dilution Factor:	10.0
		ug/kg	

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	Unknown-01	26.10	1800	s
02	Unknown-02	26.44	2600	s
03	Unknown-03	26.74	3600	s
04	Unknown-04	26.97	3800	s
05	Unknown-05	27.25	4700	s
06	Unknown-06	27.44	3900	s
07	Unknown-07	27.56	3500	s
08	Unknown-08	27.73	3400	s
09	Unknown-09	27.85	3300	s
10	Unknown-10	27.95	2200	s
11	Unknown-11	28.39	1600	s
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30	6966796* Total Alkanes	S/A		

\*EPA-designated Registry Number.

IK - FORM I SV-TIC  
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Y9SN3

Lab Name: COMPUCHEM Contract: EPW11932  
 Lab Code: LIBERTY Case No.: 45139 Mod. Ref No.: SDG No.: Y9SN2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 1503023-02  
 Sample wt/vol: 30.1 (g/mL) g Lab File ID: 1503023-0278.4  
 Level: (LOW/MED) LOW Extraction: (Type): SONC  
 % Moisture: 7 Decanted: (Y/N) N Date Received: 03/10/2015  
 Concentrated Extract Volume: 500 (mL) Date Extracted: 03/12/2015  
 Injection Volume: 2.0 (uL) GPC Factor: 2.0 Date Analyzed: 03/17/2015  
 GPC Cleanup: (Y/N) Y pS: 7.7 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	Unknown-01	11.24	390	3
02	Unknown-02	13.41	770	3
03	301-02-0 9-Octadecenamide, (Z)-	26.65	310	DN
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
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26				
27				
28				
29				
30				
3866736*	Total Alkanes	N/A	180	I

\*EPA-designated Registry Number.

AMENDED  
DATA

SDM01.2 (8/2007)

4TB

LM - FORM I SV-TIC  
SEMICVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Y9SN4

Lab Name:	COMPICHEM	Contract:	EPW11033
Lab Code:	LIBERTY Case No.: 45139	Mod. Ref No.:	SGC No.: Y9SN2
Matrix: (SOIL/SED/WATER)	SOIL	Lab Sample ID:	1503023-03
Sample wt/vol:	30.1 (g/ml)	Lab File ID:	1503023-0370.d
Level: (LOW/MED)	LOW	Extraction: (Type):	SOMC
% Moisture:	13 Decanted: (Y/N) N	Date Received:	03/10/2015
Concentrated Extract Volume:	500 (uL)	Date Extracted:	03/12/2015
Injection Volume:	2.0 (uL)	GC Factor:	3.0
GC Cleanup: (Y/N)	Y	pH:	7.2
CONCENTRATION UNITS: (ug/L or ug/kg)		Dilution Factor:	1.0

GAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
03	Unknown-01	13.42	300	J
03	9-Octadecenamide, (E)-	26.65	200	JN
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
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26				
27				
28				
29				
30				
3366796*	Total Alkenes	N/A	330	J

\*EPA-designated Registry Number.

IX - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

	SPE SAMPLE NO.
	Y9SN2

Lab Name: COMPUCHEM Contract: EPM11032  
 Lab Code: LIBERTY Case No.: 45139 Mod. Ref No.: SDX No.: Y9SN2  
 Matrix: SOIL/SED/WATER SOIL Lab Sample ID: 1503023-04  
 Sample wt/vol: 30.3 (g/mL) g Lab File ID: 1503023-0470.d  
 Level: (LOW/MED) LOW Extraction: (Type): SORC  
 \* Moisture: 10 Decanted: (Y/N) N Date Received: 03/10/2015  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 03/12/2015  
 Injection Volume: 2.0 (uL) GPC Factor: 2.0 Date Analyzed: 03/17/2015  
 GPC Cleanup: (Y/N) Y pH: 7.5 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	Unknown-01 ( <u>C<sub>8</sub>H<sub>18</sub>O<sub>2</sub></u> )	12.34	400	J
02	Unknown-02	16.61	130	J
03	Unknown-03	16.70	210	J
04	Unknown-04	17.13	1400	J
05	Unknown-05	17.22	3500	J
06				
07				
08	SL, S761/S.			
09				
10				
11				
12				
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14				
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19				
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25				
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27				
28				
29				
30				
3900798	Total Alkanes	N/A		

CDPA-designated Registry Number:

SDM01.2 (8/2007)

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IS - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Y9SN7

Lab Name: COMPUCHEM Contract: EPM11032  
 Lab Code: LIBERTY Case No.: 45139 Mod. Ref No.: SDS No.: Y9SN2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 1503023-06  
 Sample wt/vol: 30.2 (g/mL) g Lab File ID: 1503023-0670.0  
 Level: (LOW/MED) LOW Extraction: (Type): SOMC  
 % Moisture: 20 Decanted: (Y/N) N Date Received: 03/10/2015  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 03/12/2015  
 Injection Volume: 2.0 (uL) CPC Factor: 2.0 Date Analyzed: 03/17/2015  
 CPC Cleanup: (Y/N) Y pH: 9.6 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	Unknown-01	13.43	260	3
02	Unknown-02	13.43	87	3.0
03	-			
04				
05	SL 376/S,			
06				
07				
08				
09				
10				
11				
12				
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19				
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21				
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24				
25				
26				
27				
28				
29				
30				
ES66788*	Total Alkanes	N/A		

\*EPA-designated Registry Number.

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IK - FORM I 3V-TIC  
SEMICOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Y9SFQ

Lab Name: COMPUCHEM Contract: EPW11032  
 Lab Code: LIBRTY Case No.: 45139 Mod. Ref No.: SOC No.: Y9SN2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 1503023-21  
 Sample wt/vol: 30.2 (g/mL) g Lab File ID: 1503023-2170.d  
 Level: (LOW/MED) LOW Extraction: (Type): SOMC  
 % Moisture: 6 Decanted: (Y/N) N Date Received: 03/12/2015  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 03/12/2015  
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 03/17/2015  
 GPC Cleanup: (Y/N) Y pH: 9.4 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	Unknown-01	13.40	360	3
02	Unknown-02	14.64	120	3
03	Unknown-03	28.36	100	3
04	301-02-0	28.65	110	38
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
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26				
27				
28				
29				
30				
3966796*	Total Alkanes	N/A	130	3

\*EPA-designated Registry Number.

IK - FORM I SV-TIC  
SEMOVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.  
Y9SPS

Lab Name:	COMPUCHEM	Contract:	EPM31032		
Lab Code: LIBERTY Case No.:	45139	Mod. Ref No.:	BDG No.: Y9SN2		
Matrix: (SOIL/SED/WATER)	SOIL	Lab Sample ID:	1503023-08		
Sample wt/vol:	30.0 (g/mL)	g	Lab File ID:	1503023-0810.d	
Level: (LDR/MCD)	LDR	Extraction: (Type):	SORC		
% Moisture:	8	Decanted: (Y/N)	N	Date Received:	03/10/2015
Concentrated Extract Volume:	500 (mL)		Date Extracted:	03/12/2015	
Injection Volume:	2.0 (full)	GPC Factor:	2.0	Date Analyzed:	03/20/2015
GPC Cleanup: (Y/N)	Y	pH:	7.2	Dilution Factor:	1.0
CONCENTRATION UNITS: (ug/L or ug/kg)      ug/kg					

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	Unknown-01	10.11	840	J
02	Unknown-02	10.31	1450	J
03	Unknown-03	12.96	2300	J
04	Unknown-04	14.40	430	J
05	10-07-Unknown	14.41	100	J
06	Unknown-05	15.32	86	J
07	Unknown-06	26.10	32	J
08	112-84-5	26.11	140	J
09	112-84-5	26.13	450	J
10	Unknown-07	27.02	140	J
11	Unknown-08	27.55	530	J
12	Unknown-09	27.72	550	J
13	Unknown-10	27.97	630	J
14		28.39	290	J
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
CS66796*	Total Alkanes	N/A		
EPA-designated Registry Number.				

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IR - FORM I SV-TIC  
SEMICVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.  
**Y9SN2**

Lab Name:	CONFUCHEM	Contract:	EPM11032		
Lab Code:	LIBERTY Case No.: 45139	Mod. Ref No.:	SDG No.: Y9SN2		
Matrix:	(SOIL/SED/WATER) SOIL	Lab Sample ID:	1503023-08		
Sample wt/vol:	38.2 (g/mL)	g	Lab File ID:	1503023-0970.d	
Level: (LOW/MED)	LOW	Extraction: (Type):	SOMC		
% Moisture:	8	Decanted: (Y/N):	N	Date Received:	03/10/2013
Concentrated Extract Volume:	500 (mL)	Date Extracted:	03/12/2013		
Injection Volume:	2.0 (uL)	GPC Factor:	2.0	Date Analyzed:	03/20/2013
GPC Cleanup: (Y/N):	Y	pH:	7.0	Dilution Factor:	1.0
CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg					

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	Unknown-01	18.06	600	3
02	Unknown-02	16.30	750	3
03	Unknown-03	17.94	1300	3
04	Unknown-04	14.39	410	3
05	301-02-0 9-Octadecenamide, (Z)-	26.47	380	38
06	Unknown-05	27.72	150	3
07	Unknown-06	27.97	250	3
08	Unknown-07	28.37	120	3
09				
10				
11				
12				
13				
14				-
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30	*			
	E966198* Total Alkanes	N/A	99	3

EPA-designated Registry Number.

IK - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Y9SP7

Lab Name: COMPICHEM Contract: EPW11037  
 Lab Code: LIBKTY Case No.: 45139 Mod. Ref No.:  SIS No.: Y9SN2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 1503G23-10  
 Sample wt/vol: 30.0 (g/L) g Lab File ID: 1503G23-1070.d  
 Level: (LOW/MED) LOW Extraction: (Type): Sonic  
 % Moisture: 7 Decanted: (Y/N) N Date Received: 03/10/2015  
 Concentrated Extract Volume: 500 (mL) Date Extracted: 03/12/2015  
 Injection Volume: 2.0 (uL) GPC Factor: 2.0 Date Analyzed: 03/17/2015  
 GPC Cleanup: (Y/N) Y pH: 6.7 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	Unknown-01	10.98	410	J
02	Unknown-02	13.41	370	J
03	Unknown-03	14.65	160	J
04	229-04-6 30\ODC 2-(2-Decylhexyl)- (2)- 2-Decylhexan-1-yle	26.65	780	JN
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
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27				
28				
29				
30	E966796* Total Alkanes	87.8	89	J

EPA-Designated Registry Number:

1K - FORM 1 SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.  
 Y9SN2

Lab Name: COMPUCHEM Contract #: SFW1103Z  
 Lab Code: LIBERTY Case No.: 45139 Mod. Ref No.: SOX No.: Y9SN2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 1503023-11  
 Sample wt/vol: 30.1 (g/ml) g Lab File ID: 1503023-1170.6  
 Level: (LOW/MED) LOW Extraction: (Type): SONC  
 % Moisture: 14 Decanted: (Y/N) N Date Received: 03/10/2015  
 Concentrated Extract Volume: 500 (ml) Date Extracted: 03/11/2015  
 Injection Volume: 2.0 (uL) GPC Factor: 3.0 Date Analyzed: 03/17/2015  
 GPC Cleanup: (Y/N) Y pH: 7.4 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	Unknown-01	19.94	368	d
02	Unknown-02	13.39	343	d
03	301-02-0 3-OCTadecenamide, (Z)-	26.64	100	JB
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
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26				
27				
28				
29				
30				
39566736*	Total Alkenes	N/A	110	d

\*EPA-designated Registry Number.

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3K - FORM I SV-TIC  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.  
 Y9SN2

Lab Name: COMPUCHEM Contract: EPA#11032  
 Lab Code: LIBERTY Case No.: 45139 Mod. Ref No.: SDS No.: Y9SN2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 1503023-12  
 Sample wt/wt: 30.9 (g/m3) g Lab File ID: 1503023-1270.d  
 Level: (LOW/MED) LOW Extraction: (Type): SONC  
 % Moisture: 14 Decanted: (Y/N) N Date Received: 03/16/2015  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 03/18/2015  
 Injection Volume: 2.0 (uL) GPC Factor: 2.0 Date Analyzed: 03/17/2015  
 GPC Cleanup: (Y/N) Y pH: 8.0 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
01	Unknown-01	10.93	450	3	
02	Unknown-02	11.18	330	3	
03	Unknown-03	13.38	510	3	
04	Unknown-04	14.63	160	3	
05	Unknown-05	19.18	81	3	
06	201.03-0	Unknown-66 9,10-dihydro-9,10-ethanoanthracene (2)	26.64	120	3N
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
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25					
26					
27					
28					
29					
30	8966795 <sup>2</sup>	Total Alkanes	N/R	120	3

<sup>2</sup>EPA-designated Registry Number.

1E - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

ESPA SAMPLE NO.  
**Y9SN2**

Lab Name: CYANOCHEM Contract: EFW11032  
 Lab Code: LIBRTY Case No.: 15239 Mod. Ref No.: SGS No.: Y9SN2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 1503023-14  
 Sample wt/vol: 30.1 (g/mL) 9 Lab File ID: 1503023-1470.d  
 Level: (LOW/MED) LOW Extraction: (Type): Sonic  
 % Moisture: 15 Decanted: (Y/N) N Date Received: 03/10/2015  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 03/12/2015  
 Injection Volume: 2.0 (uL) GPC Factor: 2.0 Date Analyzed: 03/20/2015  
 CPC Cleanup: (Y/N) Y pH: 8.9 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	Unknown-01	10.08	1400	J
02	Unknown-02	10.31	1100	J
03	Unknown-03	12.98	2000	J
04	Unknown-04	13.43	250	J
05	Unknown-05	14.40	700	J
06	Unknown-06	15.62	250	J
07	Unknown-07	16.32	250	J
08	Unknown-08	18.08	22	J
09	Unknown-09	22.11	130	J
10	Unknown-10	27.41	130	J
11	Unknown-11	27.72	170	J
12	Unknown-12	27.97	200	J
13				
14				
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25				
26				
27				
28				
29				
30				
0966788*	Total Alkanes		N/A	

\*DRA--designated Registry Number.

IK - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Y9SN2

Lab Name:	COMPOCHEM	Contract:	EPM11032
Lab Code:	LIBERTY Case No.: 45139	Mod. Ref No.:	SIS No.: Y9SN2
Matrix:	(SOIL/SED/WATER) SOIL	Lab Sample ID:	1503023-15
Sample wt/vol:	30.3 (g/mL)	Lab File ID:	1503023-1570.d
Level:	(LOW/MED) LOW	Extraction: (Type):	SONC
% Moisture:	6	Decanted: (Y/N)	N
Concentrated Extract Volume:	500 (uL)	Date Extracted:	03/12/2013
Injection Volume:	2.0 (uL)	GPC Factor:	3.0
GC Cleanup: (Y/N)	Y	pH:	9.4
CONCENTRATION UNITS: (ug/L or ug/kg)		Dilution Factor:	1.0
		ug/kg	

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
61	Unknown-61	17.73	190	3
62				
63				
64				
65				
66				
67				
68				
69				
70				
71				
72				
73				
74				
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80				
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27				
28				
29				
30				
199667-962	Total Aikanes	N/A		

CDR-Designated Registry Number.

SOM01.2 (8/2007)

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IK - FORM I SV-TIC  
SEMICVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

		EPA SAMPLE NO.
		Y9SN2

Lab Name: COMPUCHEM Contact: EPM11032  
 Lab Code: LIBERTY Case No.: 45139 Mod. Ref No.:  SDC No.: Y9SN2  
 Matrix: (SOIL/SED/WATER) SCDL Lab Sample ID: 1503023-17  
 Sample wt/vol: 30.2 (g/mL) g Lab File ID: 1503023-1770.d  
 Level: (LOW/MED) L0M Extraction: (Type): SOMC  
 % Moisture: 7 Decanted: (Y/N) N Date Received: 03/10/2015  
 Concentrated Extract Volume: 500 (uL) Date Extracted: 03/13/2015  
 Injection Volume: 2.0 (uL) GPC Factor: 2.0 Date Analyzed: 03/20/2015  
 GPC Cleanup: (Y/N) Y pH: 7.9 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	Unknown-01	10.31	770	J
02	Unknown-02	10.32	690	J
03	Unknown-03	12.96	1000	J
04	Unknown-04	13.46	160	J
05	Unknown-05	14.40	430	J
06	301-02-0	26.48	120	JN
07	Unknown-06	27.55	130	J
08	Unknown-07	27.72	120	J
09	1000195-80-9	28.38	90	JW
10	Unknown			
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
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26				
27				
28				
29				
30				
30066798*	Total Alkanes	N/A	610	J

\*EPA-designated Registry Number.

IK - FORM I SV-TIC  
SEMOVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Y9SN2

Lab Name:	COMPUCHEM	Contract:	EPW11G32
Lab Code:	LIBERTY Case No.: 45139	Mod. Ref No.:	SOG No.: Y9SN2
Matrix:	(SOIL/SED/WATER) SOIL	Lab Sample ID:	1503023-18
Sample wt/vol:	30.1 (g/mL) g	Lab File ID:	1503023-1870.d
Level:	(LOW/MED) LOW	Extraction: (Type):	SOMC
% Moisture:	13 Decanted: (Y/N) N	Date Received:	03/10/2015
Concentrated Extract Volume:	500 (ml)	Date Extracted:	03/12/2015
Injection Volume:	2.0 (ml)	Date Analyzed:	03/17/2015
GPC Cleanup: (Y/N)	Y pH: 8.6	Dilution Factor:	1.0
CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg			

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	Unknown-01	13.37	248	J
02	Unknown-02	15.89	190	J
03	301-02-0 9-Octadecenamide, (Z)-	26.68	98	JN
04				
05				
06				
07				
08				
09				
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30				
2966796*	Total Alkanes	R/R	120	J

EPA-designated Registry Number.

1K - FORM I SV-TIC  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

	EPA SAMPLE NO.  Y9SN2
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Lab Name: COMPUCHEM Contract: EPW11032  
 Lab Code: LIBERTY Case No.: 45139 Mod. Ref No.: SDG No.: Y9SN2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 1503023-19  
 Sample wt/vol: 30.3 (g/mL) g Lab File ID: 1503023-1970.d  
 Level: (LOW/MED) LOW Extraction: (Type): SOMC  
 % Moisture: 22 Decanted: Y/N N Date Received: 03/10/2015  
 Concentrated Extract Volume: 500 (mL) Date Extracted: 03/12/2015  
 Injection Volume: 1.0 (mL) GPC Factor: 2.0 Date Analyzed: 03/17/2015  
 GPC Cleanup: (Y/N) Y pH: 8.3 Dilution Factor: 1.0  
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	Unknown-01	13.39	190	3
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
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2966796*	Total Alkanes		N/R	

\*EPA-designated Registry Number.